THE

HORTICULTURIST.

VOL. XXIII.....NOVEMBER, 1868.....NO. CCLXIX

TOMATOES, A COMMERCIAL STAPLE.

BY THE AUTHOR OF "TEN ACRES ENOUGH."

It must be evident, even to an ordinary observer of what is taking place in American agriculture, that some very remarkable revolutions are going on around us, and that within a few years past some have actually been accomplished. These revolutions embrace the lowly as well as the loftiest productions of the earth, the common garden vegetables equally with the rarest exotics. Their effect has been, in various instances, to elevate what was formerly an insignificant garden product into a great commercial staple. In none of them has this transmutation of values been more remarkable than in the rank which the tomato has been made to assume. This now popular esculent has been domesticated in this vicinity ever since the refugees from San Domingo first brought it with them. Our warm and stimulating soil was soon discovered to be peculiarly adapted for producing it in the highest perfection; but it was long in working its way up to the position of a general favorite in the market. Its taste and flavor were new sensations, not often relished when first tried, and required time and repeated effort to make them generally popular. The most extensive cultivator in New Jersey raised the tomato during six years before venturing to taste it. But two generations having been educated to appreciate the gastronomic seductiveness of the tomato, and medical science having shown it to be eminently wholesome, the masses are now devouring it with an avidity which has worked one of the most surprising among the revolutions referred to.

As a demand grew up for tomatoes, so producers became keen to supply it. Our truckers quickly attained to great expertness in causing them to ripen early, thus securing enormous prices for the first week's picking. The seeds are planted in a hot-bed, and when grown a few inches high, are shifted into other beds, sometimes twice or thrice. Each transplanting was soon discovered to have two important advantages, that of checking top growth, and increasing the quantity of roots, the grand result being that the plants oftenest shifted were sure to ripen their fruit in advance of all others. Advantage is taken of a cloudy or rainy spell in June to transfer them to the open ground. Cross furrows having been made with the plow, a good shovelful

of well-rotted manure is dropped at each intersection, and covered with the hoe. Others open the furrows without crossing, and drop the manure at intervals where a plant is intended to be set. Generally, an acre is made to contain 2,500 plants. The latter are next taken from the hot-bed, with a mass of roots inclosing as much earth as possible. A boy drops them at the proper locations, and is followed by a man, who with his hand opens a hole in the soil above the manure, and covers the roots by pressing the earth hard around them, using his hands only. One boy will drop as fast as two men can plant. Should the weather be warm, and there be no rain, but clouds only, the afternoon towards nightfall is chosen for planting. This mode of planting is practiced only with such as are to come earliest into market. With what is known as second early, and late tomatoes, the plants are dropped directly on the manure, and the furrow closed with the plow.

Now as the young tomato plant requires a large and unintermitted supply of moisture, this transfer from the hot-bed to the field, by cutting off the supply, occasions a sudden wilting, quite alarming except to those familiar with the habit of the plant. The top falls over and lies flat on the ground, especially if the sun should unexpectedly shine out, and more especially if transplanting while under glass has been omitted. But the plant, though wonderfully sensitive, is also wonderfully hardy, and will survive wilting and drought in a remarkable manner. Such as have been repeatedly transplanted grow short and stocky, and generally hold their heads erect. In a few days they go on growing as if they had suffered no disturbance. Those not so transplanted, run up spindling, and wilt the most. The ground between the rows is kept clear of weeds. No staking of any kind is practiced in field culture, the bushes, as they increase in size, lying over on the ground. It would require the branches from more than one extensive forest to stake up the quantities of tomatoes raised among us. Moreover, it seems quite certain that the heat reflected from the hot soil has much effect in hastening the crop to maturity.

In producing tomatoes for market, earliness has been the great desideratum which all growers have labored to secure. The first, even when only half colored, command from $4 to $5 per basket of three pecks. So universally popular has this esculent become, that the public appetite grows im patient for the first half-ripened supply. Hence there have been numerous efforts to originate new varieties, in hopes that some of them may prove earlier than those already cultivated. It is said that not less than forty new seedlings have been brought before the public since the tomato culture has grown to be so great a business. Others have been imported from the Fejee Islands and Japan. In this crowd of novelties some varieties have been found better adapted for a great market trade than the original West India tomato; and though not better flavored, yet in this quarter they have almost entirely driven the latter out. Our growers now prefer the Tilden, as being smoother and finer in appearance, larger in size, firmer, and a much more generous bearer. Indeed, when properly cultivated, it shows itself to be very productive.

This new aid to a growing business is one of those certain corollaries which are developed in agriculture or horticulture whenever there is seen to be occasion for them. Demand inevitably creates supply, and generally with improvement in quality. It was seen that tomato culture had grown into a staple business, with every prospect of immense extension. There was room for improvement, with a fair promise of profit in accomplishing it. Hence ingenious propagators originated better varieties. But while conferring lasting benefits on cultivators, they secured for themselves only an ephemeral profit from the sale of seeds. Having no patent on their invention, the sales of one or two seasons ex-

hausted the harvest, though they opened a perpetual one to others. But the effort to produce new and better varieties continues. We shall yet hear of some one which will outstrip in productiveness all its predecessors, and probably run up the ordinary yield of an acre to a thousand bushels.

The tomato crop, only a few years ago, was subject to the most extraordinary market fluctuations; good prices, during one week, were succeeded by others so low as not to pay for picking; at other times no sale could be found at any price, and thousands of baskets were thrown into the dock. The growers stopped picking whenever the price fell below twenty-five cents per basket. There being no demand at home, the fruit was allowed to perish on the vines. Thus, when the first rush of the market had been supplied, the long summer during which the various plantings were ripening their crops, produced but meagre returns. It is true that the late crop was uniformly remunerative; but even of that a valuable portion rotted on the field. It seemed clear that the market was overstocked, and that the whole profit must be realized from those portions of the crop which came first and last into market. It must not be supposed, however, that when prices sunk to zero, it was because the public ceased consuming, for such was not the case. Consumption went on as impetuously as ever; but the glut was overpowering. No community had stomach of sufficient capacity to keep up with it. The cause was here. In the effort of the grower to get one or two hundred baskets into market at $5 each, he was compelled to plant many acres. These acres, when in full bearing, yielded so prodigiously as to overdo the business. Every grower proceeded on the same plan. None had enough tomatoes at $5 per basket, but all had too many at zero. The business thus required something to equalize these discrepancies, some balancing agency by which the prodigious waste of the summer surplus could be utilized; in other words, a certain market at fair prices for that portion which annually perished on the vines. Yet it may be noted that, notwithstanding this waste, the tomato culture grew larger annually, because it was, with rare exceptions, an exceedingly profitable business.

But every emergency has its remedy. The regulating agency came at last through the operation of the canning process. Establishments were organized in the large cities where gluts occurred, and stood ready to sweep the market clear of berries and tomatoes whenever they touched a certain figure, the former at about ten cents, the latter at twenty-five. These concerns were soon able to absorb everything in their line. They bought up cargoes of perishing berries for which the dainty public had no stomach, and no avalanche of tomatoes was too huge for their capacity. One of these establishments in Philadelphia has employed four hundred women at a time in canning fruits and tomatoes, and consumed in a single season $30,000 worth of sugar. The canning business thus became a power in the market. It terminated the reign of gluts, made the grower certain of remunerative prices, stopped the practice of emptying cargoes into the docks, and so effectually balanced supply and demand as to protect all parties from loss, besides giving new momentum to the whole trade.

The art of canning is thus revolutionizing some branches of agriculture. It seizes on the most perishable fruits and esculents, such as must be sold immediately, and by preserving them for future use, distributes their consumption over the entire year, in place of crowding it into the brief period of ripening. The products of the canning factory became immediately popular. Establishments were rapidly multiplied, as the business was found to be profitable. Some were located where the desired productions were cultivated. Six years ago, the pioneer establishment of this vicinity was started in Burlington, N. J.; two others have since been built, and two additional ones have been put in operation within two

miles of us. All these are large concerns. The three in this city employ, in the busiest seasons, some six hundred hands, two thirds of whom are females. The vast quantities of tin cans which they require are mostly manufactured on the premises. During the tomato season, long lines of loaded wagons are seen driving up to their doors, piled high with full baskets. On every road leading in from the country, these loaded wagons may be met, all having a common destination. Boilers of forty-horse power are used for generating steam with which to cook the tomatoes sufficiently to loosen the skin. A large wire tray containing them is lowered by rope and tackle into the boiling water, and after a few minutes' cooking they are taken out and deposited on long narrow tables, on both sides of which are stationed women and boys, who remove the skins and crowd the tomatoes into cans. These are then taken to men close at hand, who solder on the tops, in which a small puncture is left open. They are then lowered, in other trays, into vats of boiling water, taken out, and the puncture closed by a drop of solder. They are then labeled and boxed for market. Wherever machinery can be advantageously used, it has been introduced; but the larger portion of the work is necessarily done by hand. The three establishments require large capitals to carry them on. They disburse weekly several thousand dollars for wages, and a much larger sum among the farmers. Most of the operatives work by the piece, the young girls and women each earning six to ten dollars per week.

On going over one of these factories, a stranger will be astonished at seeing an almost indefinite collection of tomatoes. Wherever he may turn he sees them piled up by dozens of wagon loads, with additional quantities continually arriving. If it were not for the activity of the great army of women in the canning department, who are constantly drawing on the huge accumulation in the long sheds attached to the factory, the glut would be as decided here as it has ever been in the city markets; but they dispose of many thousand cans per day, thus keeping up with the supply. Another question will occur to the stranger: Where is a market found for this extraordinary quantity of a single esculent? But the answer is astonishing as the inquiry is natural. All that these establishments can manufacture is sold in advance, and there are more orders than can be filled. The products are distributed over the country wherever there are railroads to transport them. The great cities consume them in incalculable quantities. Canned tomatoes are the daily favorite dish, from autumn to summer, on the tables of thousands of the principal hotels and boarding-houses. Private families are constantly consuming them. Every vessel that sails the ocean has the canned tomato among its stores. It is found in every eating-house in the mining regions of the Pacific slope; in fact, wherever population congregates, there, it seems, this modern preparation has already penetrated. Its popularity has become so universal, that one can scarcely over-estimate the magnitude which the business of producing and canning it is destined to assume.

Here is a vast trade grown up among us within six years. Its effect upon the neighboring cultivators, in this brief period, has been most remarkable. The old fear of an over-supply of tomatoes has disappeared. In place of going abroad to seek a market, the market has come to them. These factories now contract to purchase crops of any extent before they are planted. Already they consume the product of nearly a thousand acres lying within three miles around us, not of tomatoes only, but of pickles, sweet corn, peas, beans, asparagus, and other crops. For most of these they pay prices agreed upon when the contracts are made, such as, with rare exceptions of the season, give the grower handsome profits, as he saves freight to the city, and commission. In the instance of tomatoes,

the large quantities which formerly perished in the field now produce money, not a bushel being lost. It is true the grower agrees to deliver his entire crop, and thus foregoes the higher rates he might otherwise secure on his earliest and latest pickings. But then he exchanges uncertainty for certainty. The sum realized at the factory is probably equal to the average afforded by a fluctuating city market, as the contract system continues to be a popular one. Under it, even the unripe tomatoes, at the season's close, are gathered before the frost sets in, and are carefully ripened under glass. Everything is thus converted into money.

This present year the tomato crop has been large and profitable. Our cultivators are annually increasing it. The production, great though it already is, may still be considered as only in its infancy. Under the stimulating influence of a steady cash market at the very door of the producer, no one can say how extensive the yield may become. A few years have already revolutionized it here. This revolution must necessarily continue, and will assume new phases not at present contemplated. Other factories will spring up among us to compete for the increasing demand, until this location becomes a vast manufacturing center. This enlarged market will lead to better modes of cultivation. Ingenious minds, seeing that an obscure garden esculent of thirty years ago has taken rank as a great commercial staple, will make fresh efforts to discover and introduce better and more productive varieties, until the maximum, if there be one, shall have been attained. The tomato culture will become with many persons a specialty, and thus, without doubt, afford a higher profit than if grown as a mere appendage to a mixed husbandry.

A Remarkable Orchard House.—In the garden of E. W. Harlock, at Ely, Cambridgeshire, is an orchard house deserving the above term, not so much on account of its architecture—it is very plainly built—as on account of its contents, for it is simply a span-roofed house, 100 feet long, something under 30 feet wide, and some 15 feet high, its sides of boards, with a ventilating shutter on hinges at each side, and no roof openings; in short, the same method of low side ventilation originated at Sawbridgeworth many years since, and found so successful there. It is the contents of Mr. Harlock's orchard house that make it remarkable, for it is a perfect forest of peach and nectarine trees, the like of which can not be found in Europe. The trees are all, or nearly all, pyramids, growing in large pots and tubs, varying in size from 20 to something under 30 inches; they are from 8 to 10 or more feet in height, and not pinched in closely, as is so necessary in small houses, but the shoots are encouraged to make a vigorous growth, and only occasionally pinched in, in summer, to make the trees symmetrical or to suppress excessive vigor—for the trees are well fed in summer by surface dressings and liquid manure applied judiciously. The result of this sound culture is the utmost vigor and fruitfulness in the trees; and it is difficult at first sight to take in the idea that you see trees growing in pots standing on a hard floor, so that they can not root into the border. Many of these grand trees have borne from two to three pecks of peaches each, many of the later kinds are still in perfection, and all the fruit has been of the largest kind and finest quality. When it is brought to mind that a house of the dimensions given has and will produce some thirty or forty bushels of peaches, it seems strange that our market gardeners do not do likewise.—*Gardeners' Chronicle.*

THE QUINCE.

COMPARED with the money returns derived from the sale of its fruit, the quince has received less attention and less extended cultivation than it deserves.*

No fruit-tree can be more easily grown, none come into bearing as soon, none are less subject to blight or decaying influences, and, so far as we have observed, no fruit crop pays as well, acre for acre, one year with another, as the quince. We have repeated records of over eight hundred dollars' worth of fruit being sold from an acre; and as we write have before us one recording two hundred baskets of fruit as having been gathered from an acre of trees only four years planted. This last is certainly a large yield, but the owner gave to the land good, careful cultivation, and has

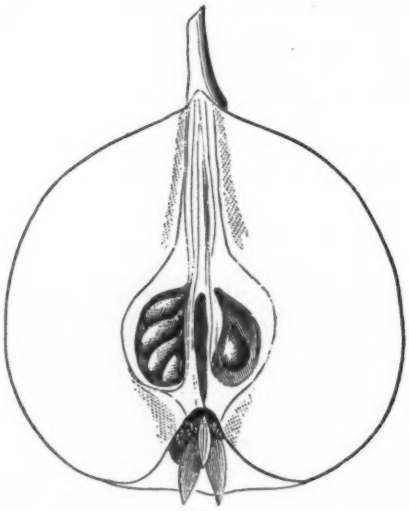

FIG. 98.—*Apple-shaped Quince.*

realized full compensation therefor. In our own grounds we have trees three years out, from which we this year have gathered half a bushel of fruit that sold readily at four dollars a bushel. The quince can be grown in almost any soil, and while it succeeds admirably in deep, rich, moist, strong or rather heavy land, it also grows and fruits finely in light sandy soil, provided a plentiful supply of manure be applied annually. Young trees can be purchased at almost any nursery, and it can be readily grown from cuttings in the ordinary way of all outdoor hardy plants. The planter will find, however, that the cheapest and best way is to buy good, strong, bushy plants about four feet high, as such plants will return in three years a crop sufficient to pay all past expenses. In planting an orchard, the

* Is it not a little remarkable that one of our best pomologists and writers fails to name or describe the quince in a late edition of his work?

usual distance has been twelve feet each way, but we incline to the impression that eight by eight feet is better, and when the trees become too much interlocked cut out every other one. The receipts in the mean time will have more than paid cost; and if the trees are grown in the bush form, with two, three, or more main stems starting from one principal crown, they will soon occupy nearly the whole ground. While the trees are young, or so long as they can be worked among by horse power, the surface of the ground should be regularly and carefully cultivated at the depth of say three inches, applying salt and well rotted manure annually. In our common gardens one or two quinces are usually found, and they are generally planted in some by-way corner, never obtaining any attention, thought, or labor, except at the time of gathering the fruit; and because in such neglected manner they do not always produce fine golden fruit in abundance, too many are disposed to condemn it as an unprofitable tree. Let the

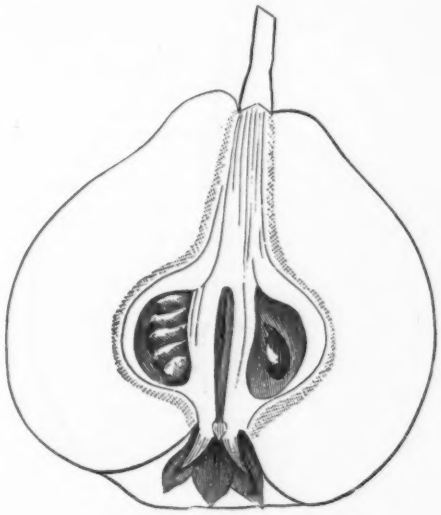

FIG. 99.—*Angers Quince.*

owners of all such trees hoe the ground clean of weeds and grass from beneath them, apply a liberal surface-dressing of well-rotted manure, cut away all the dead branches, and as the tree changes from mere life to full vigor and health they will change their opinion of its unprofitableness. In varieties there is something to choose, the orange or apple-shaped being most commonly grown, and counted best. Too often, however, seedlings of this variety have been grown and sold as the true orange, and hence we sometimes find trees that puzzle us terribly to decide the variety to which they belong, as although the quince when grown by itself will give plants from its seed more nearly alike the parent than any other fruit, yet they are rarely, if ever, identical. The true apple quince has rarely any bulge or knob at the stem, but is as represented in our outline.

Seedlings from this variety produce occasional true-formed specimens scattered over the tree, while the majority of the fruit will

have more or less of a neck or knob next the stem. The flesh of the Orange when fully ripe is of a pale orange yellow, and cooks quite tender. If gathered before ripe, it is rare that the best of housekeepers can make anything but hard preserves from it.

Rea's Seedling is something similar to the Orange, but almost always has the knob near the stem. It is claimed by good horticulturists to be larger and better than the Orange, but our experience has not been such as to induce us to prefer it.

The Portugal is a variety but little grown, we suppose because of two reasons, viz.—it matures early before really needed, and produces only moderate crops. It is one of the richest in color of flesh when cooked, becoming a purplish crimson, and

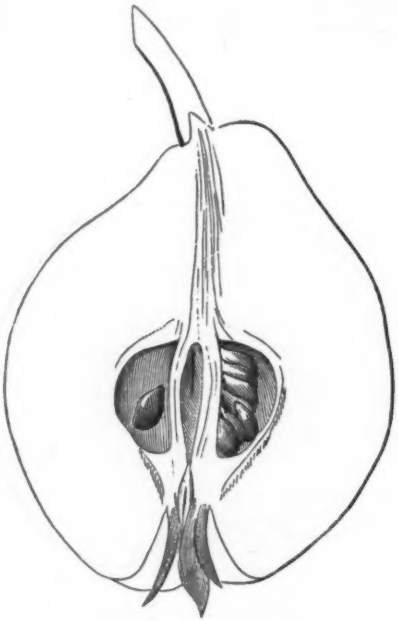

FIG. 100.—*Pear-shaped Quince.*

cooking very tender. It is easily distinguished when in foliage by its very broad, large leaf.

The Angers Quince, so much used for stocks on which to work the pear, is in point of profitableness for market, in size of fruit and productiveness, fully equal to the Orange, but the flesh is a little harsher and more acid. It, however, cooks quite as tender, and will average larger in size.

Our outlines have been made from medium-sized, or rather small specimens, but proportioned to the varieties. The distinctive marks and forms in calyx, cores, seeds, etc., are shown, and need not be written.

The Pear-shaped, fig. 100, is perhaps more commonly found in small gardens than any other variety, we suppose for the reason that many persons imagine quinces

all alike, their quality and appearance depending on soil, and so when fitting up a new home have procured a sprout or two from a neighbor free of cost. This variety is longer in form, and rarely colors as early or as brightly as either of the preceding. The calyx is set in a deep, narrow furrowed basin. The flesh is a deeper yellow than the Orange or Angers, but it is less tender, and unless very perfectly ripened does not cook tender. It is a good, upright grower, but not a good variety for one's own family use or profitable for market.

HYBRID FERNS—*ASPLENIUM EBENOIDES* (?).

Much speculation has been indulged in recently, by those interested in the cultivation of ferns, upon the subject of obtaining hybrid ferns by proper manipulation, in plant houses. The question has also occupied eminent botanists, whether true hybridism occurs in this section of the vegetable kingdom? Opinions are divided on the subject, and as no veritable instance, well authenticated, has been presented of a hybrid fern, the question remains an open one. True, it has been stated by one cultivator, that he succeeded in obtaining hybrids, but on a close examination of the details of his operations, the fact is at least questionable. In an editorial article, the editor of the London *Gardeners' Chronicle*, T. Moore, a well-known authority in pteridology, reverts to the subject; he states that but two apparent cases have been communicated of hybrid ferns, and one of these refers to an American species of *Asplenium* found in this vicinity, and *supposed* to be a hybrid between the Walking Leaf (*Camptosorus*) and *Asplenium ebeneum*, as it was found in a locality densely inhabited by these two species, no other similar plant having ever been observed. On these data, and after a careful examination of specimens sent him, M. J. Berkeley, an authority in cryptogamic botany, and

Fig. 101.—*Asplenium ebenoides.*

secretary of the London Horticultural Society, concluded the plant was a hybrid. The late Sir Wm. J. Hooker, to whom he referred the matter, admitted the plant to be entirely unknown to him, and as it partook of the distinguishing characters of two species indicated, said "that if there were such things as hybrid ferns, this might be one."

Subsequently, Mr. Eaton, of Yale College, wrote to the effect that the plant known as *Asplenium ebenoides* (? Scott) was not a hybrid, nor even a new species; with this conclusion, however, Mr. Moore did not agree, as he saw points of difference between it and the species to which Mr. Eaton desired to refer it. Now, it may seem strange that the fern in question was submitted to Mr. Eaton by Dr. Asa Gray, of Cambridge, long before it was sent to England; fronds from the individual plant were furnished him in 1863, and subsequently, but he was not acquainted with it; at least he referred it to *Asplenium pinnatifidum*, in which Dr. Gray did not concur. As the plant was published, without the consent of the discoverer, in a monthly horticultural journal, with a print furnished a friend, I hope it will not be supposed that he was anxious to have it recognized as a hybrid, or even as a new species, in opposition to such an authority as Mr. Eaton, who is admitted by the editor of the *Gardeners' Chronicle* to be "better able to judge of American ferns than any one else."

One thing is clear, however: no botanist who has ever seen the plant, or specimens from it, but has admitted it to be entirely distinct. With such authorities as Sir Wm. Hooker, M. J. Berkeley, Asa Gray, and many others, we are satisfied to let the identity of *Asplenium ebenoides* (?) rest where it is. One thing I will guarantee—there is no money in it. This variation is a very important illustration of Dr. Darwin's theory of the origin of species.

R. R. S., Philadelphia.

"A Very Poor Practice.—Under the head of 'Transplanting Evergreens,' the *Horticulturist* says:

"'Unless our trees are small and removed with balls, we practice heading back of all the limbs, and even the leader, full one half to two thirds of the growth. It matters not what the variety; all the evergreen family appear to bear this heading back without injury. In fact, in nine cases out of ten, the following year's growth more than compensates. It also helps to thicken up the tree.'

"Now, we have transplanted hundreds, yes, thousands of evergreens, varying in size from eight inches up to five feet in height, not one of which was removed with "balls" or "headed back" an inch. And in all our experience we can see no necessity for "heading back" an evergreen at the time of transplanting. It is true that "heading back" will thicken up the foliage; but to pretend that such treatment at any time will in any way benefit the tree, is sheer nonsense."

[We differ with the editor of the *Iowa Homestead* in considering the heading-in of the branches of large evergreens on transplanting as a poor practice. Trees five to eight feet high *we* call *small* trees, and such we never head back; but we yearly superintend the removal of dozens of evergreens, fifteen to twenty-five feet high, well feathered to the ground. With such trees we find it impossible to remove a sufficiency of root to sustain the tree entire until new roots are formed, and hence we remove some of the foliage, thus reducing demand on the root; and having practiced both ways, and finding ourself from year to year more successful when we head-in large trees than when we do not, we doubt very much the correctness of the term "sheer nonsense" to the practice.—Ed.]

ONTARIO PEAR.

FRUIT, medium size, globular obtuse pyriform; surface, rough in appearance; color, pale light greenish yellow thickly dotted with suffused green dots, and occasionally russet patches and a russet line half way from stem to apex; stem, medium length, moderately stout, inserted without depression, but with a lip or ring at base; calyx, large, wide, and open, with long recurved segments; basin, moderately deep, round, smooth; flesh, yellowish white, slightly granulous, melting, juicy, sweet, and rich;

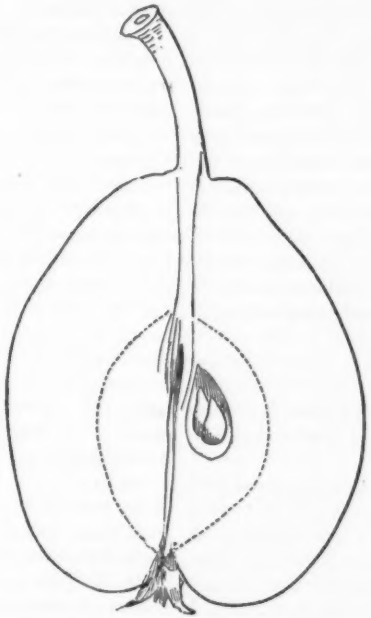

FIG. 102.—*Ontario Pear.*

core, surrounded by a deep yellow granulated line; seeds, broad oval pointed, dark yellow brown. Season, last of September.

The accompanying outline and description of the Ontario Pear have been made from specimens of the fruit received from Messrs. Ellwanger & Barry, Rochester, N. Y., well and favorably known as good nurserymen and good judges of fruits. The tree is said to be an upright good grower, quite productive, and the fruit valuable as a market variety.

SQUASHES, APPLES, SWEET POTATOES, etc., require to be gathered carefully, without bruising, then stored in a *dry, cool* place.

ORANGE CULTURE IN FLORIDA.

MR. EDITOR: Your note requesting my views on the above is at hand; but as your correspondent has so thoroughly ventilated the subject, I can add but little unless in corroboration of his statements. I may remark that, in complying with your request, I have no selfish ends to answer,—having no interest, directly or indirectly, in land in any Southern State. My first visit to Florida was made in 1844, and the last in July of this year.

Mr. Jacques states that "good high hammock land requires no preparation before planting except clearing and digging the holes." I am aware that this is the course usually pursued in Florida; and that the trees grow and bear under such treatment. But if planters could be induced to properly prepare the land before planting, the yield would be increased, and the size and quality of the fruit improved. The orange is a hardy tree, and will annually furnish its harvest under treatment which would destroy an apple or pear tree. The trees are badly planted, and are allowed to "go it alone."

I am convinced that your correspondent's "facts and figures" will be severely criticised by those who have been in the habit of pocketing a small yearly income from the culture of fruit, vegetables, or grain.

During the month of January, 1865, I carefully examined a grove of about 300 trees—one that had received no care or culture for four years. A large number of oranges had been gathered and sold, yet my estimate of the remaining portion of the crop was 1,500 per tree; number of trees to the acre 130; valued at $25 per 1,000, $4,875 per acre. In July last I examined another grove, planted about nine years; the trees were planted very close, say 200 to the acre. My estimate was 1,500 fruit per tree; and if the owner can realize but $20 per 1,000 for his fruit, he will receive $6,000 as the product of one acre. Reduce the price to half a cent per orange, and the result would be $1,500 per acre,—a profitable investment when compared with strawberry or grape growing.

Mr. Jacques refers to stocks, and I fully agree with him that the wild orange stock offers the quickest return; but I am convinced that the orange is more luxuriant in growth, and the fruit is larger, if budded on the lemon stock. This, I admit, is a tedious process of raising a grove, but one that deserves the attention of the settler. The day will come when nursery-grown oranges will be in demand, more especially if the grower is careful in selecting superior varieties for the purposes of propagation. With regard to durability, the lemon stock is objectionable. It is the received opinion on the Continent, that the orange, budded on the orange, will last for 300 years, but on the lemon only 100. But even if worked on the lemon, a man can plant a grove for the benefit of his children. During a recent visit to Florida I instituted inquiry relative to the price of stocks, etc., and was informed that parties would contract to supply the stocks, plant them, and, at the proper season, bud them, at 50 cents per stock.

Mr. Jacques remarks that "Florida oranges are the best in the world;" and I am convinced that some of your readers who are not posted will exclaim that "such a statement is all bosh." Now, sir, Mr. Al Fresco claims to know a good fruit from a bad one; and as he has eaten oranges grown on the Continent, Azores, West Indies, Australia, and Pacific islands, he contends that he is in a position to compare; and he has no hesitation in asserting that he never found any to equal those of poor neglected Florida. The climate of Florida seems peculiarly adapted to this fruit—developing to the greatest

extent all its good qualities; but what is wanted is some enterprising person to introduce the Navel orange. This variety is the largest of the family, seedless, juicy, productive, and carries well. When some one cultivates this variety in Florida, where it can attain perfection, and forward to the New York market some of its fruit, then, and only then, will our Rip Van Winkle fruit culturists awake to the advantages of our favored neighbor. Some years since, at one of the British consulates in tropical America, twenty-seven varieties of fruit appeared at the dessert; and the host requested the opinions of his guests regarding the best fruit on the table, and all decided in favor of the Navel orange.

The climate of Florida seems to possess every requisite to develop all the individuals of the citrus family. The lime grows to perfection; and the citron grows to greater perfection than on the Continent. During a recent visit to Florida we were presented with a "small citron" weighing three pounds, and were assured that "some of the same crop, from the same tree, weighed eight pounds." I was positively assured by a gentleman in St. Augustine, that his crop of lemons from "one tree, about fourteen years old, sold for over $100"—the fruit were sold to visitors as curiosities. The gentlemen pointed out three "small lemons," which he informed me were "the last and the smallest of the crop," and kindly presented me with the largest of the three. Upon measuring it I found it to be five and one half inches in length and eleven inches in circumference.

Very inferior oranges are to be found in many of the groves; and this fact is readily accounted for from the fact that many of the trees are seedlings, and in some cases no care was exercised in selecting buds from best varieties. In certain portions of Florida, and, if my information be correct, mainly in the neighborhood of Mandarin, the fruit of the orange is subject to a vegetable fungus or parasite, which leaves a dark stain upon one side of the fruit.

Some will assert that orange culture will soon be overdone and "fizzle out," like strawberry and grape growing. This will not occur for a lengthened period, if at all. Strawberries, grapes, pears, apples, and such fruits, can be raised over a vast extent of country, but the culture of the orange must, of necessity, be confined to a comparatively limited area. Our population is rapidly increasing, and new markets are being constantly opened up by railroad extension. Why in the name of common sense send our spare change abroad for oranges, lemons, limes, and citrons when we have the climate and soil to produce them in greater perfection than the imported?

During a recent visit to Florida we found the date, papaya (*Carica papaya?*), guava, and banana growing freely, and producing abundance of fruit. We have reason to believe that the tea plant would prove a success on the heavy soils and hilly lands about Tallahassee. For our supply of pine-apples we are mainly dependent upon the Bahama Islands, and we annually, for this fruit, place in cousin Johnny Bull's pocket thousands in gold. Yet, strange as it may seem, in some portions of Florida we have the soil and climate to produce pine-apples in the greatest perfection. In the English colony of Natal, with a climate approaching that of Florida, the culture of coffee has succeeded; and, I may ask, why not test it in Florida? From observation, and data derived from reading, and conversation with reliable persons, I have reason to believe that the following list of productions will prove successful in Florida: Cocoa, almonds, olive, vine, pine-apple, plantain, yam, arrow-root, jalap, rhubard, ginger, cinnamon, cayenne pepper, senna, madder, opium poppy, cloves, black pepper, nutmeg. It would be useless to refer to the quality and productiveness of the cotton and sugar in Florida. With the diversity

of climate, productiveness of the soil, and frequency of rain during the summer months, the only question is, what tropical production will not prove a success in Florida?

During the summer of '65 I traveled over nearly every portion of the South, east of the Ohio and Alabama rivers, with the exception of Florida, and found disease existing among grapevines to a great extent. The Scuppernong alone seemed to be exempt; and with this exception, I concluded that the grape would prove a failure in the South. During a recent visit to Florida my attention was more particularly directed to the grapevine; and after carefully examining a large number of vines of different varieties, I could not detect a trace of disease, except in one place, where I found the fruit had rotted. This condition was accounted for when I ascertained that water could be obtained by sinking a hole twenty inches deep. What surprised me most was to find that "hardy as an oak" grape, the Delaware, growing freely in a light soil, and presenting no trace of disease. From my limited observation I have reason to believe that the grape will prove a success in eastern Florida; and that lands worth one dollar and twenty-five cents per acre will eventually be clothed with vineyards. Some of your readers will state that it is strange that the vine has not been tested; but they must recollect that sugar-cane and cotton have always been productive crops since Florida was ceded to the United States. And, according to Vignolles, "it is a well-known fact that in west Florida the French Government ordered a suppression of the vineyards lest their success might injure those in France; and we learn that similar restrictions, as to the olive, and perhaps the grape, were imposed by the Spaniards over the Florida colonies. Although these decrees are ancient, and have, perhaps, long become dead letters, yet they must have prevented the spirit of enterprise that in the first instance suggested such enterprises, which, once quenched, were not easily revived."—*Vignolles' Florida*, New York, 1823, p. 98.

The climate of eastern Florida is unequaled. The winters are dry, warm, and enjoyable; during the summer months rain is ample, and the range of the thermometer is never so high as in the Northern States. Although the mean at Pilatka is 80° for June, 81° for July, 80° for August, and 78° for September, yet the thermometer seldom rises above 90°, and a pleasant sea or land breeze is nearly constant. In our Northern States the thermometer frequently rises during the summer months to 95°, and sometimes to 100°. The monthly extremes of temperature at Fort Columbus (New York city), for thirty-two years was as follows: June, 89°; July, 93°; and August, 89°. At Key West, Florida, for twenty-three years, the monthly extremes ranged as follows: June, 88°; July, 89°; August, 89°. I have selected Key West from the fact that it is warmer during the summer months than any portion of Florida east of the St. John's River. During the heated term of last summer I left New York on the 4th of July to escape the intense heat of our mid-summer, and enjoyed a pleasant sea breeze at St. Augustine, with a mid-day range of the thermometer of from 80° to 84° of Fahr. scale.

Many suppose that the South is unhealthy, and more particularly Florida, because yellow fever sometimes prevails at Key West and Pensacola. The intending settler need not select a home within the limited area where yellow fever is an annual visitor. There are certain localities where fever and ague prevails, as it does in the neighborhood of New York city; but this is no reason why such localities should be selected. From observation, and facts derived from statistics and reliable persons, I am convinced that a man is more likely to enjoy health in Florida than in the Northern States.

During a recent visit to Washington I was favored with an interview with the

Commissioners of Agriculture and Land, and arrived at the conclusion that these departments possess but little positive knowledge regarding eastern Florida. It seems to us that if the Hon. the Commissioner of Agriculture were to select some competent person to examine and report upon the climate and productions of Florida, that it would prove a profitable investment to Uncle Sam. If an individual were selected who could adapt himself to the habits of the people, and throw his opinions and prejudices overboard for the nonce—one who has a knowledge of horticulture and pomology, as well as kindred subjects—a mass of valuable information could be collected that would, if published in the Report of the Department of Agriculture, benefit our country. The adoption of such a course would direct the attention of our people to the advantages of Florida, as well as the population of the fruit-growing regions of the Continent, who entertain the opinion that the whole United States is merely a hyperborean region. It seems to us that such a course would benefit more than the publication of lengthy articles on the older States.

Some persons visit Florida and form an opinion of the whole State after examining but a limited portion. One of our leading agricultural correspondents passed from St. Augustine to Picolata by stage, over the worst portion of the State, and condemned everything in unmeasured terms. What is wanted is some unprejudiced and competent person to examine eastern Florida, and tell a plain, unvarnished tale.

To avoid letters to answer, and other objectionable features in connection with a published name, I must sail under false colors; but may remark, that if any of your readers desire further information regarding Florida, you can inform them where I can be found, and that I shall be happy to tell all I know of this great fruit-growing region. It is more than probable that I shall visit Florida at an early day; and if I do I shall only be too happy to furnish some facts and figures regarding orange and grape culture there. AL FRESCO.

THE WHORTLEBERRY.

THE whortleberry, or huckleberry as commonly called, like the blackberry, is fast passing away from among us as a wild fruit; and unless some exertions are made toward its cultivation, not many years can pass ere the fruit will become a rarity in any section, and entirely unknown where perhaps now it is abundant. Although a native wild fruit, yet it has ever been confined to certain limits and sections of the country, and as soon as those sections are cleared up and cultivated, the whortleberry disappears; while it is yet to be had in some sections for the picking, its value in the New York and other city markets is such that we feel assured it would prove a more remunerative crop than strawberries; and once a plantation of it is made, it is permanent, and will require but little care annually to continue it. The past season the fruit has sold as high as eleven dollars a bushel, and not below five dollars, to our knowledge. In productiveness it is surpassed by no plant or fruit producing shrub, we having often gathered a quart from a single bush, which if allowed as a rule, and we consider an acre planted with bushes, at a distance of one by three feet, would give about three hundred and eighty bushels, that, counted at the lowest price—five dollars—would amount to nineteen hundred dollars. But we consider this a fancy estimate, and only produce it to show how the matter can be figured up. Let us take a more moderate view, and putting the crop at half a pint to a plant—certainly

a safe estimate—and we have then ninety-five bushels to the acre, which at five dollars would give over four hundred dollars to the acre, an amount beyond the average of the berry crop generally.

Thus showing its value when produced, we have next to take the soil, cultivation, etc., required to produce it. In its wild condition it is found in almost all soils, from a poor, hard, thin clay, running through all the grades of sand and loam, to a deep, rich, but wet, swamp muck, so that we can have little doubt of success, plant it where we may. In its varieties, it is found wild in shade and in open bleak exposures, so that here again we have reason to look for success in almost any location; but whether it will bear cultivation of the soil, or require the surface to be kept in turf or mulched, as it is found wild, is a point yet to be proven by practice; but that it can be grown as a crop, and profitably, we have not a doubt, and trust the subject will be so brought before our nation by some energetic person as to induce general attention and soon extensive planting.

GRASS *VERSUS* CULTIVATION FOR ORCHARDS.

The practice of permitting the grass to grow and form a sod on the surface of the ground devoted to orcharding is advocated by some quite intelligent writers; while others, equally as intelligent and of long experience, oppose it, and maintain that in order to have good, fair, and well-grown fruit, it is necessary to keep the surface of the ground loose and free from any exhausting crop. Both are undoubtedly correct, in part, for we have seen orchards that while yearly cultivated produced fine and perfect fruit, but as soon, or within three years of after being left in grass, the fruit became knotty and imperfect; and again after cultivation produced fair and perfect crops. Again: we have seen *old* orchards in many States that have had no cultivation for years, and yet produce crops of fair and handsome fruit. We know cherry-trees that have had nothing but turf beneath their branches for many years, and yet their fruit is annually fair and good. And, again, we know of cherry-trees that were kept cultivated ten or more years, and then gave yearly beautiful fruit, but afterward neglected and left in turf, the grass not even mowed; since then they have not for several years produced fruit equal to former seasons or up to the same grown on trees of like varieties well cultivated not a half mile distant. "One swallow does not make a summer," nor does one man's success in growing a crop in a certain manner entail any certainty that that is the best way. That deep cultivation, with a plow going near to the bodies of the trees and breaking the roots yearly around the crown, and six to eight inches deep, occasions injury and may be counted as a bad practice, we have no doubt; but that a young or bearing orchard is the better for being let alone and the grass permitted to grow, rather than have the soil annually stirred and kept loose, free to the action of air, heat, and moisture at a depth of three to four inches, we do not yet believe. There is undoubtedly a medium desirable: too deep and too frequent stirring of the soil or too late in the season would unquestionably be detrimental; but if a young or bearing orchard has the surface soil to a depth of three inches well cultivated in all the growing portion of the year, we have not a doubt that nine times out of ten it would present a more healthy appearance, and give better fruit than one left in sod, even if all the grass be left to decay upon the spot where it grew. Certain deep rich soils there undoubtedly are which have in them a superabundant food for vigor-

ous and rapid growth of trees planted therein for many years; but these are the exception rather than the rule in all our best fruit-growing sections. Locations of this sort on the prairies, and in rich valley bottoms, are to be found; but they are not generally counted as most to be valued for fruit-growing; and to prepare orchard ground by a first thorough deep trenching and enriching, if thought necessary to success, would check progress in orcharding to an extent that where now there are hundreds, there would not be ten acres planted yearly. We are decidedly in favor of progress, and if we could believe that neglect would grow young orchards and produce equally good fruit as judicious, careful, intelligent cultivation, we should advocate it most heartily, on account of labor-saving, which is a heavy item in the way of getting an orchard into, and keeping it in, a healthy, vigorous condition; but at present we are not sufficiently advanced to do other than advise every owner of a young orchard to keep the surface of the ground stirred annually in the early part of the summer to a depth of three or four inches, repeating the stirring up to August, as often as the ground appears hard or packed by heavy rains; and especially do we advise all owners of young orchards to keep all grass or litter from around the bodies of or near to the trees during the winter season because of probable depredations from mice that may harbor therein, and in time of heavy snows obtain their food from the bark of the young trees.

NUT GROWING.

It is somewhat surprising that with all our nation's love of gain, and the general appreciative admiration of beautiful trees for shade and ornament, we have so few instances where nut-bearing trees have been adopted for planting in place of the maple, elm, or linden. The chestnut, butternut, black walnut, and Madeira nut, where the climate will admit, are all beautiful as shade ornamental trees; can be transplanted while young without a loss of over ten per cent.; grow very rapidly, and come into bearing usually from the seventh to the tenth year from seed. The hickory or white walnut is more difficult of transplanting; but even that we have removed with success by digging deep and obtaining, and again replanting entire, the tap root. This tap root retaining is, in fact, a feature of importance with all the nut-bearing trees, its loss often resulting in death of the tree, while, if fully retained, a tree rarely dies. It is, however, more certain, and probably most economical, to plant the nuts where trees are designed to stand. This may be done and the ground yearly cropped to corn, potatoes, or small fruits, and at the end of five years or so it may be left in grass if desired. As a paying productive crop, as a permanent investment, attended with little or no labor in the cultivation or pruning, etc., we know of nothing more reliable than that of an orchard of nut-bearing trees. Our native forest trees are being rapidly destroyed, and without the attention of horticulturists to the subject of growing nut-bearing, as well as apple and pear trees, we shall soon find the products of our native land, in this particular, more rare than that of foreign shores. Already the chestnut commands a ready sale at from eight to twelve dollars a bushel, while the white walnut sells freely at from two to three dollars; and yearly as time rolls on, these prices are enhanced rather than reduced, because of the increased demand and the lessened product by reason of cutting away the native forest trees. We write this having just come from an orchard of about sixty trees,

now about twenty-five years old, and from which the owner last year gathered an average of over one and a half bushels to the tree, paying him a net return, exclusive of labor of gathering, of over six hundred dollars. These trees stand in pasture land, and when the owner was clearing up the forest, were young saplings and left to grow, with a hopeful looking forward to the present result. In our earlier days we spent many a day gathering the white walnut, and our recollection is of six to eight bushels of fruit to a tree, for which buyers then paid one dollar a bushel; and as the trees were in pasture land, the product was a clear net gain, extremely acceptable to the owner.

JACKMAN'S CLEMATISES.

Among the returns that have been made as to the effect of the late drought on particular plants, the value of these new hardy clematises as additions to our summer budding plants must not be overlooked. As Mr. Fleming, of Cliveden, has well observed, "they have in their several varieties the very colors of which our summer flower-gardens are in a great measure deficient;" and these colors are presented not only in what may be termed huge masses, but also with a richness so far beyond any other bedding plant yielding the same hue of color, or even an approach to it, that any comparison between them would be as incongruous as one instituted between Mr. Thomson's new grape and the ordinary white currant.

But have these clematises successfully stood the test of the hot, fierce summer sun and the prolonged drought? This is the point of interest for bedders-out. To this it can be replied, that scarcely any position could be said to afford so good a test of their fitness in this respect as the flower-garden in front of Mr. Jackman's residence at the Woking Nursery. A free sandy soil would be thought to be one specially open to the hostile action of the drought; while the position of the beds admitted of scarcely any shelter to its occupants from the scorching tropical heat of the unclouded sun; and yet nothing could be healthier-looking than the foliage of the plants, and rarely anything in its way more magnificent than the immense array of flowers the beds presented, tinted with rich violet, purple, and mauve lines, that fairly glistened with and reflected a beauty quite of a new order and degree in the flower-garden.

One large bed on the left of the dwelling-house as it is approached from the carriage drive, and of a kind of elongated kidney shape, and a corresponding bed on the other side of the garden, of a somewhat similar design, were planted with seedling clematises from the same batch out of which C. Jackmanni and others were selected. They were all good, and generally partook of the color of the variety just named, there being, however, slight differences in the hues, as some were paler than the others—just enough to impart to the beds a lively appearance, yet without interfering with the coherence of the mass of coloring produced.

Two things about these beds were noticeable: the one, the symmetrical growth of the plants, rising up in an aggregate elevation of evenness to the height of some twelve or fifteen inches; and, secondly, in this emerald couch seemed to recline a glorious mass of color, presenting an almost unbroken appearance, and yet without any trace of formality. These plants had had the advantage of some three or four years' growth, so the roots were strong and the vines stout; yet such is the rapid growth that these hardy clematises make, that a

single plant will soon cover a surprising surface, either of a bed, or wall, or trellis. Hard pruning is a process these clematises may be said to "delight in," and so in November all the wood is cut away to within six or eight inches of the roots, and this causes them to break away very strongly in the ensuing spring. Good living is another delight, and so, soon after pruning, a thorough dressing of rich, well-rotted manure is forked in between the plants—in fact, it would not be too much to say that they are gross feeders, and can take a good share of very strong nutriment. Mr. Jackman, who has now the experience of a few years to guide him, recommends giving them very liberal treatment in this respect. The plants thus cut back in November make early growth, and put forth their leaves as early almost as the hardiest shrub that hastens to greet the spring. Nor is any covering absolutely required during the hardest and sternest winter; the utmost hardihood appears to be their inheritance, a recommendation of no mean order. The growing shoots should be pegged down, both to preserve a good outline to the bed, and to prevent the vines from being disturbed by the wind. The habit of the plants themselves tends to further a symmetrical arrangement of growth, as the laterals are actually blooming wood, and do not take the form of wood-producing shoots.

The beds are edged with some perennial variegated plant generally, though annuals could be employed, if required. Of these perennial plants such things as Lonicera aureo-reticulata, Stachys lanata, Vinca elegantissima, and the showy Salvia argentea, are used with the best effect. These variegated plants form a nice contrast to the mass of green foliage, or the subsequent addition of the brilliant layer of coloring; and perhaps of the kinds named the Lonicera and the Stachys are the best.

But, it will be asked, do these clematises bloom successionally? They do so in a remarkable degree, and if an inducement were occasionally applied during the summer in the form of some manure water, there is no doubt but that the plants would gratefully repay the application of such a generous regimen. A copious watering occasionally during dry weather would by no means be strength spent for naught, but it should be a thorough saturation of the roots. Even in a dry summer like the present these grand beds appeared to be indifferent to the drought, seeing that a mass of green foliage effectually screened the roots from the direct action of the sun, and kept the soil about them nice and cool, while it acted as a check on excessive evaporation.

A certain mode of obtaining a succession of bloom has been tried by Mr. Jackman with marked success; and it is well worthy of notice, especially by those who bed-out on a large scale. The plants that are pruned back in November may be said to bloom by the 1st of July in ordinary seasons, though in the case of the present summer the plants so pruned were in bloom fully three weeks earlier. If, instead of pruning in November, it be done in April, a postponement of the blooming season, so to speak, would be secured, and the plants should begin to bloom early in August, and this without any perceptible loss of vigor, or otherwise, by the retardation of the flowering period.

Some other beds also challenged attention; and of these two were of a long oval shape, and were planted with C. rubro-violacea, edged with Lonicera aureo-reticulata. The plants of this variety of the clematis having only been planted in the preceding autumn, were necessarily not so strong as in the case of the seedling plants before mentioned; but there was yet quite enough of bloom to show up with fine effect the striking reddish violet hue that pervades the flowers of this variety. The Lonicera was remarkably good; indeed, there is nothing like a dry summer to bring out the especial fitness of this plant to decorate the flower-garden; and in this

particular relation it contrasted admirably with the mass of color it surrounded. Two other corresponding beds of the form of the segment of a circle were planted with C. Jackmanni, edged with Euonymous radicans foliis variegatis; this arrangement, too, was very good indeed: and it is no doubt true that of all the new hybrid clematises Messrs. Jackman & Son have sent out, C. Jackmanni gives the best and most enduring body of color. Two small oval beds had as their occupants C. lanuginosa candida, edged with Vinca elegantissima. Perhaps in the case of this variety the drought was too severe, the want of the vigorous constitution and free-growing habit of the new varieties deprived it of the power of contending against the opposing elements of heat and drought. The present season must not, therefore, be taken as conclusive against the fitness of this fine variety for bedding purposes; if it were to succeed well, it would give a grand contribution of white to the flower-garden, supposing that freedom and continuity of bloom could be had from it.

The planting of these clematises, in whatsoever way they may be used (and there are several other ways in which they may be grown most effectually), can be done from September to April. At the time of planting, the soil should be freely manured; old, thoroughly rotted and well-seasoned manure should be used, and some leaf-mold, and, if near at hand, some calcareous soil will be found very beneficial. Prune back hard in November in each year to within four to six inches of the surface of the soil, and when this is done the plants should be mulched with good manure, which should be allowed to lie on the surface till the end of February, and then be forked in about the roots. To sum up, it has been well said that "to develop the beauties of these new varieties to the utmost, a light rich soil is requisite. A warm position is better than a cold one, yet relative climate is not of such great importance as full exposure to sunshine, and a tolerably dry sub-soil. Every kind of clematis is at home on chalk, and probably in many gardens on the chalk, where some favorite bedders make but a poor figure; these plants would prove of great value if assisted with good manure and leaf-mold to give them a fair start in the first instance. Their brilliant shades of maroon, purple, and violet can not be equaled by any other race of bedding plants; and wherever and whenever they are seen they will be renowned and remembered."—*Gardeners' Chronicle.*

STATE AND HORTICULTURAL FAIRS.

A MORE than usual success has attended the various State and local Horticultural Fairs this autumn. The attendance of people has been large, and the exhibitions in every branch of agriculture, horticulture, and mechanic arts greater than ever before.

The Cincinnati Horticultural Society prepared an immense room in a most elaborate and tasteful manner, studding the floor and tables completely with plants, fruits, and flowers. The advertised award of the Longworth Wine-House's premium for the best wine-grape of the United States drew a large number of leading horticulturists, expecting to see competition by many sorts, and also expectant of seeing there all the new varieties of promise; but in this they were partially disappointed, the display of new sorts being quite meagre. The Longworth award was given to the Ives as the best wine-grape for all our States—a judgment that may possibly prove true, but at this time has many opponents, and justly too, inasmuch as the grape, although an old sort in one or two vineyards about Cincinnati, has been by vine-growers

in that locality but slightly esteemed until within a year or two, and tested in very, very few locations in that or other States. Of other fruits than grapes, the exhibition was fair, and as usual exhibited fruits grown with care, side by side with those uncared for in cultivation—the one luscious, tempting; the other, of the same variety, almost repulsive in appearance. A few seedling pears were shown, but nothing of good promise, and no new apple of value.

The Ohio State Fair had one of the finest shows of fruits ever made, especially in grapes, a leading fruit just now in the north part of the State. Of these, however, nothing new of value appeared, but the size and ripeness of some of the older varieties astonished many. Iona alongside of Catawba was classed as *almost* as good, while the Concord exhibited a sweet richness that would carry the must certainly up to 80°. Mottled was shown in its true character, and so good as to awaken a lively interest in this old, really valuable, but little appreciated grape. The show of apples and pears was unusually fine, evidence of the admirable fruit section as well as of the good cultivators surrounding the city of Toledo, where the fair was held.

The State Horticultural Show of Iowa, notwithstanding the deficiency in the apple crop there this season, was yet up to any former one, and the fruit, as a whole, gave evidence of good cultivation and a better knowledge of sorts adapted to their climate than some of the shows in former years. There is no question about Iowa being a good fruit State, as the show of apples, pears, and grapes at this show would convince any doubter. Even chestnuts were on the table, grown domestically, as we may say, by Suel Foster, an enthusiastic fruit-grower of that State.

At the Michigan State Fair the show of fruit was not large, but in the collections were many beautiful specimens of well-proven varieties. Michigan has a great deal of good fruit land, and the show of such products should have been far greater.

Of vegetables, the *Western Rural* says:

"The Michigan Agricultural College made a very fine display of solanaceous productions, consisting of potatoes, vegetable eggs, peppers, etc. The specimens were in excellent condition, and being very well arranged, attracted much attention. There were 36 varieties of the tomato. That which is known as the College Tomato No. 1 is said to have done best this year, and next to this, College No. 2, which is a hybrid between College No. 1 and the Tilden. It is as large as No. 1, but a little later. College No. 3 is smaller than either of the foregoing, but is very solid, grows in large clusters, and is well adapted for pickling. Keyes' Tomato did not ripen as early, or turn out as well in any way as the College No. 1.

"Of potatoes there were exhibited by the Agricultural College 56 varieties, with the acreable produce of each noted on the cards. The Early Handsworth came to maturity earliest of all, but did not yield as well as several others. The Early Rose is said to have supported its high character."

The shows of grapes at the Wisconsin and Minnesota State Fairs indicate success in growing all the early ripening, hardy varieties, such as Delaware, Hartford, Concord, etc., and the displays of apples evidence in the number of seedling crabs shown, that many portions of the States must largely depend upon improved varieties of that class for their main crops of winter fruit. There is one point of encouragement, however, for all the Northwestern orchardists, and that is in the less number of insect enemies they have to contend with, thus insuring more fair and beautiful specimens of fruit than can be grown in milder latitudes, even with great care. The move now making toward originating a class of apples belonging to the crabs is a good one, but if they will select their best crab and then fertilize with some of the best Russian varieties, the progress will be more rapid than to continue reproducing crabs, even if seeds of the best are selected.

MIXING UP.

THE thought has often crossed our mind—"Does the human race progress as a whole?" We suppose the voice from the aggregate would be in the affirmative; and as examples in proof, reference would be made to the telegraph, the steam-engine, and a host of other inventions, not forgetting the improved weapons of death, for the quicker and sharper man can slay his fellow-man, so it also shows the *progressive* intellectual condition of man, brave, noble man. But let us come nearer home and talk of horticulture, that solacing occupation that tames the savage, attracts the would-be assassin in wonder from his evil pursuits, and makes the warrior, not a slayer of his brother Abel, but an energetic tiller of the ground, and all men better men who study nature and God in and through His works. We would that horticulture were progressive from its noble founder Adam to the present moment; but we are at the same time sorry to say that we think otherwise; for where there is advancement, it is rarely found among those who labor in it for a living and claim it as their profession. We mean gardeners. There are but few who read; few who ever subscribe to a horticultural magazine; few that are observing; and scarcely one in a hundred who knows anything of vegetable physiology, and to whom botany is a dead language, and the operations of their occupation are mechanical. Almost in every instance where we find a horticultural journal, it is on the tables of the gardener's employer. This is proper enough; but it certainly should be in the hands of every man claiming to be a gardener. There are very honorable exceptions to the statement made, and we say respectfully to such, that they have a weighty duty to perform, and that is, the advancement of all others where they see it is needed. No man need feel that by imparting knowledge to another that such will be injurious to himself, for the very opposite will be the result. Every finely laid-out place, every properly regulated garden we see, with all its fruit-trees correctly named, will impress this order of things on the mind and taste of the employer, and hence his unwillingness ever to permit anything different. This makes good situations and creates the desire for good, neat, clean, practical, clever gardeners. It was only the other day that we were called into a gentleman's grounds to advise in matters relating to its fruit culture, and it is only one instance among many that come under our observation. Money appeared to us to have been spent liberally; but, said this gentleman, "I am utterly dissatisfied with this *comfortless* state of things. Here I have in this garden some five or six hundred pear-trees, and don't know the name of one of them! There is four hundred feet of a grapery, and the fruit (the majority) is so poor, colorless, and watery that I am ashamed to place it on my table for dessert when I have company; and another thing is, I can not, under the circumstances, take any gentleman through these houses. And I have come to the conclusion, that if I can not have better results than is manifested here at the present time, I will pull the whole thing down and discontinue its use, for I am determined not to be annoyed with it." "Has not your gardener suggested some alterations, sir, which have not been yet effected, and which would produce the proper requirements if done?" "We will take a walk through the houses, and I will introduce you to the gardener." "Your Hamburghs appear to color poorly," was our remark. "Yes, sir; you see the Hamburghs, and Muscats, with other sorts, are planted *mixed up*, and they never *do* this way for any length of time, for after a

while they will *mix up*." This to us was new in the science of morphology; we noted the hint and walked on. This is no over-colored picture, reader, but as near as our memory serves us, the *verbatim* of that spoken.

Neither are such erroneous ideas confined to those practicing horticulture, for we notice a correspondent in the *Farmers' Chronicle*, by the name of G. S. Innis, discussing the question whether potatoes will *mix up*, and gives several cases of his own experience, where he planted pure Neshannocks and pure Pinkeyes in the same hill and grew them together, and lo! they turned out true (the potatoes) to their kind, *and continued so for ever after!* "But white corn and yellow corn will 'mix up,' and why not potatoes and grapevines?" When we find the *stalks* of white and red corn "mixing up," then we may rely upon it that every other plant and tree grown will "mix up;" till then, however, things will go on as they now are, which is the "mixing up" of seeds (in some cases) the plant produces. Let it be understood as a fact or law in nature, that no hybridizing or artificial fecundation ever effects any change in, or on, the organization of the plant so fecundated, but in the *seed* of the plant so fertilized. Hence corn becomes "mixed up" when white and red are grown together, and also in the case of the potato in question; if the Neshannocks and Pinkeyes were planted in the same hill and produced flowers, and the one variety became naturally fecundated by the other, a "mixing up" would be the result. This would be in the seeds; but in order to positively know that a "mixing up" had been effected, the seeds produced must be sown, when the young progeny would at once determine the fact of a cross being effected by the appearance of the potatoes the plants produce. But no change could possibly take place in the two original potato tubers placed in the hill, any more than there could be a change or "mixing up" of two varieties of apple-trees growing side by side in an orchard, or two varieties of grapevines growing side by side in a vinery or vineyard.

When we see intelligent men discussing such points in our agricultural papers on the subject of "mixing up" two tubers of potatoes by planting together in a hill and allowing them to grow together, to see if that will effect a change of *variety* in them another season, it does not seem to augur the rapid progress of our art as we would wish it, but *per contra*, especially when editors seem to enjoy with innocent zest the ludicrous experiment of things "MIXED UP." JOHN ELLIS.

BEAN POLES, OR NO BEAN POLES.—Like many other old practices, almost every one who grows a variety of the running or vining bean, sets poles from eight to twelve feet high upon which to train them. One of our correspondents writes us that last year, from want of time to do the work, he neglected this part of pole-bean growing, and realizing so well from his neglect, he this year followed it up. This year, however, he spread a little coarse apple-tree brush along the ground, and over that, just a little raised from the ground, grew the bean vines, producing him a crop fully equal to any he ever obtained from the best of care in training to poles. He argues that, "the shade given by the vine when trailing over the brush is a great advantage in keeping the earth moist and at an even temperature;" and that, "the effect of strong winds is also much less injurious to the vines." We hope further experiments will be made in the coming year — for if this brushing is equally as good as the poles, certainly considerable expense is saved in the crop.

EDITOR'S TABLE.

To Contributors and Others.—Address all Communications, for the Editorial and Publishing Departments, to F. W. Woodward, 37 Park Row, New York.

POULTRY.

Mr. Editor: A friend of the writer, who is beginning to take a lively interest in poultry-growing, propounds the following questions, and desires answers thereto:

1st. "What months are considered most favorable for having young chickens hatched out?"

2d. "What kind of food is best for promoting their rapid growth?"

In answer to the first interrogatory I have to say that for this latitude, and with the necessary facilities for protecting the young broods against the storms and inclemencies incident to the season, I esteem the months of March and April as the best for having them come forward; while in regions farther south I should prefer to have them hatched out at least a month earlier. Now, this preference for early hatching is predicated, in part, upon the supposition that somebody will look after the welfare of the young birds, and not allow them to be given over entirely to the mother's care. Where they are to be abandoned entirely to their mother, and to struggle and scratch their way up as best they may be able, I think the better plan will be to allow the hens themselves to determine the times and seasons when they will bring forth their broods. Chickens hatched in the early spring, where properly protected and tended, are generally more vigorous and healthy, grow more rapidly through the summer months, and make larger fowls than those arriving in later portions of the breeding season. And, furthermore, pullets which come in the early spring are so well matured that they will commence laying in the ensuing fall, and lay through the winter, if they are duly fed and protected. From my own observation I am satisfied that chickens coming in the early spring are less liable to that pestiferous affection called gapes (a disease which destroys thousands annually, and which is caused by a little red and thread-like worm which is supposed to be produced through the spring rains or night dews, and finds its way, through the food or drink of the young chick, into its windpipe, and there remains and feeds till the lungs of the little bird are perforated and life is destroyed), than those which come at a later period, when the chilly night-dews hang heavy upon the rank grass, and the genial sunshine of May unbars the prison doors of that insect-world, which, evoked from its long torpor, is vitalized into an active ministry of evil as well as of good.

In this immediate connection it may not be inappropriate to give the results of an effort to raise summer-hatched chickens during the current year. Notwithstanding the writer had doubts as to the result of the experiment, doubts created as well from his own past experience as the testimony of others, he nevertheless procured and put into the charge of an intelligent and careful farmer, early in the month of June last, a lot of vigorous and superior young hens and a cock of one of the most popular breeds. Early in the month of July broods of chicks, ranging in number from nine to fourteen, began to come forth from the eggs of these fowls. Though vigorous and sprightly when first taken from the nests, in the course of ten days or a fortnight

these chicks began to droop and grow feeble and finally perish, one or two a day, until the most of them had disappeared. This result brought vividly to mind the statement of an English editor, who, in replying to a correspondent who questioned him as to the cause of the fatality among his summer broods, said that while he was unable to explain the cause or to relieve his embarrassment, there was a generally prevalent opinion among English henwives that

"The chicks which are hatched when there's making of hay
Are not apt to thrive, but to perish away."

In answer to my friend's second question I have to remark, that I esteem bread crumbs (Indian meal, mixed simply with water and cooked either in an oven or in the embers of a wood fire, and then crumbled up), wheat, broken rice, and cracked Indian corn as the best food for chicks when first taken from the nest. English poultry-growers use oat and barley meal extensively, but never having tried it, I am unprepared to speak of its merits. Cooked food is more nutritious and more digestible than if fed in its raw state, and where convenient should be used. As the chickens increase in size, add cooked fresh meat, chopped fine, three or four times a week, and be certain to allow them the widest possible range, when the weather is favorable, where they can have unobstructed access to grass, and scratch among the leaves for bugs, worms, and insects. The more you can induce your young birds to eat, the more rapid will be their growth and development. Both *variety* and *exercise* are needful to make your chicks heavy feeders and vigorous in health. And be sure to see that they have free access to fresh water whenever they wish it. Fowls that are delicate feeders can not be fatted rapidly. Now, bear in mind that the above suggestions are made mainly in reference to young fowls. If adult fowls were fed in the liberal manner indicated, many of them would soon grow too fat for the requirements of the egg basket or the purposes of maternity. E.

THE VINELAND AGRICULTURAL AND HORTICULTURAL FAIR. — Vineland was founded seven years ago. It is now a place of twelve thousand inhabitants. Recognizing the advantage which follows the comparison of ideas and products, an agricultural and horticultural society was early established, holding regular weekly meetings. After a time an annual fair was also instituted, the completeness of which should mark the progress of the place. The fourth in the series was held early last month, and it was much fuller and more satisfactory than either of its predecessors. The attendance was very large, for in addition to the company at home, excursion trains brought reinforcements from Philadelphia, Salem, Atlantic City, and intermediate stations. A band furnished music for the occasion. There is a spacious hall appropriated for these exhibitions, with pleasant grounds around it, and an oak grove in the rear. The hall was tastefully decorated with evergreens and festoons of flowers, and rustic pictures and other handiwork of fair fingers ornamented the walls and corners. The long tables were loaded with such a variety and abundance of vegtables and small fruits as would have done credit to the richest county in the Empire State. Especially noteworthy was the show of grapes, pears, peaches, quinces, sweet and common potatoes, and melons. The soil appears peculiarly adapted to the culture of these things. There was also a good display of onions, corn, tomatoes, squashes, honey, peanuts, etc. The premium list was liberal, and special prizes were offered for ladies' equestrianship, and for specimens of Vineland printing, painting, and sculpture. There were also special awards for the best farms, and to those who showed the most taste in ornamenting grounds or in the neatness with which they kept the walk and roadsides contiguous to their premises. The Floral Society made an attractive display. Some of the designs were exceedingly unique and tasteful, especially those of Mrs. W. H. Wood, who has remark-

able genius in this direction. A mammoth strawberry, covered with immortelles, and labeled "Joe Thunder, our 1700, knocks for a premium," created much amusement. It was "the happy idea" of Mrs. J. K. Read. Among distinguished people present at the fair were Commodore Paulding and the Hon. John I. Blair. The latter made an entertaining speech. The regular address was by S. Edwards Todd, author of "The Young Farmer's Manual," "The American Wheat Culturist," "Country Homes," and other valuable works on rural topics. The address was full of good practical suggestions, and was listened to with close attention and interest. Remarks were also made by Dr. I. P. Trimble, Entomologist of New Jersey; Charles K. Landis, founder of the colony; Mr. C. B. Campbell, secretary of the Society, and others. Altogether the exhibition was successful, and highly creditable to the managers and to the people of the place.

A. B. C.

When earthing up to trees or plants, this fall, in order to protect somewhat the roots during winter and to turn away the surface water, be careful that no basins or hollows be left next the tree or plant in which water can stand. Many a tree, vine, and shrub counted perfectly hardy has been killed entire by means of a pool of water standing around and over the crown, and left to freeze, and by its pressure destroy the life of the bark. Such injury is rarely noticed until near midsummer, but then death comes and the owner seeks for a cause, and usually attributes it to some insect; or if a new plant, asserts that it is not hardy. Now is the time to attend to the subject, before the frost penetrates and locks up the ground to prevent.

List of Apples.—One of our correspondents asks us to "name a list of apples that as a rule may be generally relied upon in most of the Northwest." Just at this time it is a difficult task to name over two or three varieties, really termed as highly estimable where the apple is generally hardy, that have been fully proven in the Northwestern country, *i. e.*, Wisconsin, Minnesota, etc.; but we will venture a list which may at least be counted as of good promise, as follows: Duchess of Oldenburg, Tetofsky, Fameuse, Early Joe, St. Lawrence, Porter, Jonathan, Winesap, Wood's Greening, High Top Sweet or Sweet June, Red Astrachan, Keswick Codlin; and then, for certainty, we would plant Marengo, Hyslop, and Transcendant Crabs.

Professor of Agriculture Wanted.—One of the first colleges in the land is in want of a competent person to fill the above position. If there are any such among our readers, they would do well to refer to advertisement in our advertising columns.

The *Prairie Farmer* chronicles a St. Ghislain pear-tree, on quince root, standing in the grounds of Mr. W. H. Hausen, twenty-five feet high, ten inches in diameter, and finely proportioned, from which forty dollars' worth of fruit has been sold this season.

Apples that fall from the tree in an unripe condition, those that are wormy or half decayed, may all be made of value by gathering, mashing, and pressing out the juice for making vinegar. It is best to gather and mash them and then leave them in a tub for a few days, until they get soft and soured somewhat, before pressing. The juice, with the addition of a little sorghum molasses, makes capital vinegar, almost, if not quite, equal to that made from ordinary cider.

Buy Your Trees in the Fall.—We do not care where you are located, you will always find it advantageous to purchase your trees and vines in the autumn rather than spring. You will generally get better trees and plants in the fall—you will be more likely to get the kinds you want, and if you are not ready to plant out, the trees will be on hand ready for you on the first opening of spring.

THE old bearing canes of raspberries and blackberries it is best to cut away before winter, and the sooner it is done the better, because they are constantly taking from the supply of those intended to fruit the next year, and hence they reduce the amount of vitality and strength of bud and cane and lessen its capacity to endure the climatic changes of winter.

PLOW UP TO THE ROOTS OF TREES AND VINES.—All young orchard trees, grape-vines, raspberries, blackberries, gooseberries, etc., should now have the earth either plowed or shoveled up toward them, leaving the center line between rows as a surface water-line for winter drainage. Breaking of the roots by the plow at this season will not injure the plants, trees, or vines, so that the laborer need not be afraid of going too deep with plow or spade. Leave the ground as rough as it will naturally lie,—in other words, do not rake and smooth down, after plow or spade, because, when left rough, the action of the elements during winter serves almost as good a purpose as a light dressing of manure.

EVERGREENS, where they can be procured from a near-by nursery, may be removed with almost sure success during October. The trees have completed their growth, and the soil being warm when removed, the broken roots will heal and form new roots much more rapidly than in spring, when the earth is cold. Keep the roots from even a half hour's drying; and when planting, thoroughly saturate the ground immediately in connection with copious watering, before completely filling in all the earth. If a rainy time occur, the artificial watering may be dispensed with. If but a few trees are to be removed, the operator can almost always select a cloudy or drizzling, rainy day, when, if it is not quite so pleasant working, there is less care required to keep the roots from drying, and the application of water by hand can be entirely dispensed with.

SELECT HYACINTHS.—An old grower of hyacinths writes the London *Journal of Horticulture*, giving the following as among the best varieties. He considers single flowers more beautiful than the double, and hence names but few double sorts.

FIRST SERIES.

DOUBLE RED.

1. Noble par Mérite.
2. Prince of Orange.

DOUBLE BLUE.

3. Van Speyk.

SINGLE RED.

4. Cavaignac.
5. Florence Nightingale.—This is not the same as a poor variety of the name which appears in some lists.
6. Howard.
7. Le Prophète.
8. Macaulay.
9. Madame Von Tuyll.
10. Mrs. Beecher Stowe.
11. Princess Charlotte.
12. Princess Clothilde.
13. Solfaterre.
14. Von Schiller.

SINGLE LILAC.

15. Haydn.

SINGLE WHITE.

16. Alba Maxima.
17. Mrs. James Cutbush.
18. Paix de l'Europe.
19. Snowball.

SINGLE BLUE.

20. Argus.
21. Bleu Aimable.
22. Marie.
23. Pieneman.

SINGLE BLACK.

24. Duc de Malakoff.
25. Ida.

SECOND SERIES.

DOUBLE RED.

1. Duke of Wellington.

DOUBLE BLUE.

2. Garrick.
3. Laurens Koster.

SINGLE RED.

4. Amy.
5. Cosmos.
6. Duchess of Richmond.
7. Lady Sale.
8. Madame Hodgson.
9. Ornement de la Nature
10. Princess Beatrice.
11. Sultan's Favorite.
12. Victoria Alexandrina.
13. Von Schiller.

SINGLE WHITE.

14. Elfrida.
15. Gigantea.
16. Mont Blanc.
17. Grandeur à Merveille.
18. Grand Vedette.
19. Princess Helena.
20. Queen of the Netherlands.
21. Tubiflora.

SINGLE BLUE.

22. Baronne Von Tuyll.
23. Charles Dickens.
24. Couronne de Celle.
25. Grand Lilas.
26. Leonidas.
27. Lord Raglan.
28. Raphael.

SINGLE BLACK.

29. Mimosa.
30. Prince Albert.

SINGLE YELLOW.

31. Anna Carolina.
32. Heroine.

BULBS that bloom in early spring, like crocus, narcissus, hyacinths, etc., planted just at the edge and beneath the shade of evergreen trees, present a very beautiful effect when in flower, besides occupying room of little value for any other purpose.

Cuttings of all hard-wooded plants or shrubs, such as the gooseberry, currant, spiræas, prairie roses, etc., made and planted out this month in a light sandy or loamy soil, well drained so that no water can lay upon it during winter, will callus, make some roots, and grow off rapidly and vigorously next spring. The bed should have a light covering of straw, leaves, or other mulching, to prevent the frost heaving the ground and displacing the plants during winter; but the mulch should not be applied until the ground is completely frozen for winter.

A. R. Whitney, Illinois, has a bearing apple orchard of one hundred and thirty-five acres, and numbering over fifteen thousand trees. He last year marketed over ten thousand bushels of apples on the line of the Pacific Railroad. So says the *Prairie Farmer*.

Strawberry Beds that have not been carefully and deeply dug among and the plants weeded out, should no longer be neglected. It is absolutely requisite, for the production of a good crop next season, that the earth be deeply dug among and around them before the season of the year's growth is entirely closed. The plants this season lay up in their crowns store for support and vigor of growth next spring, just in principle as the bud on trees lays up within it supply for support and growth, until the roots come into activity and furnish supply; hence the necessity of giving the strawberry plant opportunity to gather abundant food by its roots before winter.

Strawberries in Winter at the South.—It has been published that strawberries can be had in December and other of the winter months with very little trouble. We very much doubt the fact. It is probable that with extra care, deep trenching, and preparing the bed, and by reason of a peculiar season, the vines will push and produce fruit; but it will be found a rule of exception—rather, certainty; and while we advise growers of strawberries South as well as elsewhere to give them the best of culture, we caution any one upon presuming on a *certain* crop during early and continued winter in any of our Southern States.

Late digging or plowing the ground in autumn will serve to destroy a large number of insects; and if the ground is left up rough, the winter's frosts and snows will act upon it to the full value of a light dressing of manure. Clean it first of all weeds, then plow or dig deep, one or two inches below the depth at which it has ever before been stirred. Clay grounds are especially benefited in this way. We have ourself changed the character of a piece of clay soil, by three winters of frost action, from being one in which we could not grow a single thing, not even beans, to one producing good potatoes and tomatoes.

Late Autumn Planting of Trees.—We confess our preference for early autumn planting, but if we had a hundred or more apple or pear trees to plant, and the choice came between late autumn or spring, we should choose the late autumn. In autumn planting, the roots have time to heal or callus during winter, the earth gets well settled; and if the earth is well banked up around its base, the tree will be free of water at the root, and will not be swayed by the winter winds, or any more affected than when standing heeled in, as trees are often left to pass the winter preparatory to spring planting.

Rose Hedges.—In our Southern States the Cherokee Rose has long been grown as a hedge plant, and we have seen miles of it perfectly beautiful in appearance, and at the same time a complete barrier against intruders of all sorts. In light, thin soils this rose grows freely, and soon forms, by means of interlacing and crowding down the branches from time to time, a broad and massy line. For rich, deep soils the Chick-

asaw Rose is by some cultivators deemed superior, from it not growing quite so vigorously. These rose hedges at the South are generally regarded as their best fences, being also easily grown from cuttings, planted at once in the hedge row.

In our Northern States we have seen occasional pieces of hedge formed with the Prairie Rose, usually the variety known as Prairie Queen, and in each case, when any ordinary degree of care has been taken to plat or intertwine the shoots, the result has been highly satisfactory, resulting in forming an impenetrable barrier, and at the same time a highly ornamental one, especially in the months of June and July. A piece of hedge now in our mind, grown from the rose known as Kentucky Multiflora, mingled with Prairie Queen, certainly presented to us one July the most showy and beautiful hedge we ever saw, not even excepting the Japan Quince. For small division fences or barriers, to screen the vegetable from the flower garden or lawn, we consider rose hedges as among the most beautiful and easily kept of the many kinds that can be grown.

Laws of the Road.—The *New England Farmer* publishes the following as the rules of law governing travel upon our public roadways. It contains two points, viz.—that relative to carriages going the same way, and that relating to stopping in the middle of the road, which we think are not generally remembered, if known, and therefore we give it place in our columns.

"Our laws require turning to the right, giving one half the road. Loaded teams are by courtesy allowed the whole road when it can be done without too much inconvenience. Almost all men driving a light carriage will do this, especially on bad roads or up hill. If collisions occur when the party is out of his proper place in the road, he is liable to damage for the injury sustained, unless the being there was unavoidable by reason of the horses being unmanageable. In this case it becomes the other party to give way, even if he has to take the *wrong side* of the road. If both parties are in fault, *neither can recover.*

"When carriages are going the same way, the foremost driver is required to turn to the left and allow the hind one to pass him on the right, if driving faster than he is.

"This law is too often disregarded, and, in fact, I suspect, is not generally known. It would seem as if common politeness ought to be sufficient to enforce the practice, did we not have such abundant evidence to the contrary in our experience.

"The law also requires that we should not stop our teams in the *middle* of the road, which is designed for traveling purposes only. We have no right to obstruct it. These are the principal provisions of the law respecting traveled highways."

Cultivate Chestnuts.—One of our correspondents writes us that, "having about two acres of bearing chestnut trees, he has observed that such trees as were in the cultivated portion of the lot bear regularly and abundantly, but those in sod bear only occasionally, and then not as large fruit or in such quantities." During our residence in the State of Wisconsin, some years since, an intelligent farmer called our attention to several hickory trees, standing in his cornfield, which he stated had for several seasons borne a large crop of nuts, while others standing in the adjacent "opening" produced few or none. The evidence was before our eyes in an abundance of nuts on those trees under cultivation, while the others were almost entirely barren. We should like to ask other owners of nut-bearing trees if they have ever observed the same results.—Ed.

An Enemy to the Wistaria.—The *American Agriculturist* states that plants of the wistaria have this season been injured by the Tityrus skipper (*Eudamus tityrus*), which is described in "Harris' Insects." It is the first and only insect we have ever heard of preying upon the wistaria.

"When you wish to procure young fruit-trees of a particular kind for transplanting, the way is this: Dig around the old tree for some eight or ten feet off, and turn the end of the detached root up out of the ground, and it will send out shoots the first season, and in a few years bear fruit of the same kind as the parent tree, and it will make just as good a tree as the one that you would have to purchase of a nurseryman and pay two or three dollars for."

[We cut the above from one of our exchanges, and give it insertion merely to draw the editor's attention, and suggest to him that when he advised as above to procure a young fruit-tree, he forgot to tell the operator that the young tree would be like the stock on which the nurseryman had grafted his variety, and it might produce a crab, tough and stringy, or a sweet fruit, dry and tasteless, but never the same kind as the budded or grafted tree procured from the nurseryman. With the facility and at the low price at which trees can now be procured, together with the more than usual knowledge and integrity engaged in the nursery profession, there is no reasonable cause, other than that of a desire to know how to do everything, on the score of economy or correctness for any planter of trees, to practice growing them himself. Our advice to every tree planter is to apply to a reliable professional grower and obtain of him trees duly named and of the best character at a good, fair, living price. Take no scrubs or cull trees even as a gift.]

Goodrich Potatoes.—*Editor Horticulturist:* I wish to say one word about the Goodrich potatoes which are yearly advertised as one of the best and most prolific. I have grown them now four years—they produced well, but when sent to market can not be sold a second time to the same consumer, because of their inferiority in quality. I have tested the matter thoroughly, and while so far I have sold my crop freely in spring at three dollars a bushel for seed, in autumn no person knowing them will buy at twenty per cent. below price of other eatable sorts. It is about time for this variety to be laid on the shelf and a better one introduced, which perhaps we have in Early Rose, Shaw, or some other ot comparatively new introduction. A.

It is better to make cuttings of all hardy shrubs, as currants, gooseberries, wiegelas, spiræas, etc., in the autumn than to delay until mid-winter or spring. At this time the wood and bud are all in full health and capable of sustaining themselves into growth in spring independent of the root; but late in winter they are often so much enfeebled by exhaustion and exposure to extremes of cold, that often they fail to grow even under the best of care. This loss of vitality, if the shoot or bud were left on the parent plant, would be renewed in the spring by means of the roots, but when separated therefrom, can not be replaced, and hence the cause for a too oft failure in growing winter-made cuttings. Cuttings at this time, early in November, may be at once planted out in the open ground where they are to grow, and covered entirely first with earth, then over it a light character of mulch, as straw, meadow hay, etc., the mulch to be removed in spring and the earth also down to a strong bud. Or the cuttings may now be tied in bundles and packed in clean sand in a cool cellar or pit, or they may be packed away in thin layers, with moss intervening, and so kept for planting out in early spring.

Autumn Peas.—It is not a common practice to grow peas for eating green in the autumn months, but we have found that when planted in August at a depth of from four to six inches they grow well, and during September commence blossoming; and when frosts have destroyed our beans, tomatoes, etc., our peas are ready for gathering, and prove a very desirable table acquisition for the season. We sow only the early sorts, such as Carter's First Crop, Little Gem, etc., for this late production.

A Rare Magnolia.—In the *Dixie Farmer*, published at Nashville, Tenn., we find an account of a visit to the grounds of J. S. Downer, Elkton, Ky., and notice of "a magnificent specimen of the magnolia of which Mr. D. has not been able to get the correct name; some botanists who have examined it pronounced it the result of a cross of M. grandiflora and M. glauca; it has the towering habits of growth of the M. grandiflora and the leaf cones and fragrance of the glauca, and the writer believes it belongs to the latter without any admixture, but is a grand improvement in habit of growth over the normal type of its species." [Has Mr. Downer or Mr. Heaver compared this with Magnolia longifolia?—Ed.]

Dixon's Low-down Philadelphia Grate.—Furnaces have now come into general use for heating dwellings of the better class, and as many of them are now constructed, maintain a genial and moist atmosphere—superior, in our opinion, to all forms of steam heating. Still, every man who builds a house, either in city or country, should have at least one open fire-place or grate, either for coal or wood. The comfort to be derived from the cheerful blaze of an open fire in the evenings of the early fall of the year, when it is yet too early to light the furnace fire, is only to be appreciated by those who have experienced the luxury. The open fire is also available on very cold and windy days—when the furnace fails to create a sufficient warmth. Of all the forms of grates that we have seen, that manufactured by Messrs. F. S. Dixon & Sons, of Philadelphia, seems to us best adapted to the purpose—as they burn either hard or soft coal or wood, are easily set in any fire-place, and are, in appearance, very ornamental.

Pokeberry.—Those who are fond of a delicate dish of greens in spring will do well now to make a planting of poke or pigeonberry (*Phytolacca decandra*) roots. Prepare the ground by deep digging and dressing it with a heavy coat of well-rotted manure, and after dividing the roots much as with pie plant, set them about two feet apart each way, covering the crowns an inch deep. In spring, the young shoots are gathered and cooked the same as asparagus, and once eaten, are almost universally preferred to that plant.

List of Peaches.—D. C. Benton, of Quincy, Ill., gives, in the *Journal of Agriculture*, a long list of peaches which he has fruited this year, and from which he selects the following as being his first choice for profitable market growing in that locality, viz.—Crawford's Early, Yellow Rareripe, Oldmixon Free, Late Admirable, Stump the World, Oldmixon Cling, Philadelphia, Scott's Nonpareil and Allen's Late October. To this list he adds the following as the next best varieties, viz.—Troth's Early, Reeves' Favorite, Jacques' Rareripe, President, Crawford's Late, Ward's Late Free, Heath Free, Gaskill's Late, Smock Free, Beer's Smock, and Heath Cling.

Japan Lilies.—A friend writes us that "the past two years he has been particularly observant of two beds of Japan lilies in a neighbor's garden,—one growing in the ordinary open exposed garden bed—the other planted among some rock-work on the north side of the house. The first blooms a few days the earliest, but the flowers are soon gone, while the latter continues in bloom nearly six weeks."

This is a significant hint to planters of hardy bulbs, as it means that the latter bed has moisture and depth for the roots, sustaining their growth for a long period, while the former, by reason of open exposure, are enhanced perhaps in period of blooms, but from the heat are brought rapidly to maturity. Planters of lilies, therefore, should, in order to have abundant and long-continued blooms, dig the ground very deep, and in spring, or just before blooming time, shield the surface by a light surface mulching.

INCREASE YOUR PLANTING OF SMALL FRUITS.—We beg to urge the attention of every owner of ground to the importance and value, as a health product for family use, of the small fruits, so termed, such as strawberries, raspberries, etc. Without any regard to pecuniary gain, or discussing the point as to whether it is cheaper to grow than buy, or *vice versa*, the free and daily use of all the small fruits does so add to enjoyment and health, that we would urge every one to plant in such abundance, that were the crop, as it sometimes is, partially destroyed by frost, winter, or other cause, there would yet be a sufficiency not only for daily consumption in free abundance, but a surplus to give away to newly settled neighbors, to can, preserve, etc. It is not sufficient that you have strawberries enough to have them for tea every day during the season,—you should have them on the table at each meal; and the bed should be free and open to your children and friends to eat as often and as many as they please. The same should be your case with raspberries, currants, etc.; and if you have not ground in abundance, then plant a little thicker, give extra care in cultivating, and reap a reward in daily comfort and enjoyment for self and family as well as making glad others, and in inducing them to follow your example.

PRESIDENT WILDER STRAWBERRY.—The publishers of the *American Journal of Horticulture* announce that they will be unable to begin the delivery before the fall of 1869.

MATTHUSHEK PIANOS.—It is not our custom to refer to advertisements inserted in our advertising columns, but in the present case we think we are doing our readers a favor by calling their attention to the advertisement of Messrs. Barlow and Matthushek. Mr. Matthushek, after years of labor, has accomplished a long and desired result, in the manufacturing of pianos, to wit: an instrument of small size and compact form, with all the advantages of purity and volume of tone of the large square pianos of other makers. We are something of a musician ourself, and often take a little recreation by running over the keys of our colibri. We have had the instrument now several months, and wonder why we have passed ten years of our life without the solace of music. One important reason suggests itself: our little cottage parlor is of too narrow dimensions for a Steinway or a Chickering; but Matthushek's instrument occupying but little more room than a table, fits into a corner and is out of the way, is a handsome piece of furniture, and its tone is unsurpassed by any other instrument that we are acquainted with.

BOOK NOTICES.

"ELLIOTT'S LAWN AND SHADE TREES."—The author of this book, F. R. Elliott, of Cleveland, Ohio, is well-known as one of the best landscape gardeners as well as horticulturists in the United States. The object of the work appears to be to disseminate in a plain practical manner, intelligible to all, a knowledge of the size, habit, soil, etc., of trees and shrubs, and their adaptation to positions suited to their best and most permanently pleasing effect, whether planted on the roadside, in the cemetery, or private garden. It is concisely written, elegantly illustrated with drawings from nature, and a book that should be owned and read by everybody. Price, $1 50 by mail.

TIM BUNKER PAPERS.—All readers of the *Agriculturist* will remember Tim Bunker and his talks with the farmers of Hookertown; all will acknowledge the wholesome truths of his practice and advice then given. These papers have now been collected in a neat volume of 310 pages, and put forth to the reading public by Messrs. Orange Judd & Co., the enterprising publishers of the *Agriculturist*. All those who have a piece of land to cultivate will receive much information and a good share of amusement by a careful perusal of the book.